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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,004	07/11/2003	Yoshihiro Mizoguchi	35880	4381
116	7590	09/10/2004	EXAMINER	
PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			BRASE, SANDRA L	
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/618,004

Applicant(s)

MIZOGUCHI, YOSHIHIRO

Examiner

Sandra L. Brase

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-11 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/11/03 & 1/21/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. Figures 7 and 8 are should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. The disclosure is objected to because of the following informalities.

On page 6, line 13, "than" should be changed to "that".

On page 11, line 1, "and" should be changed to "or".

On page 16, line 13, "as" should be deleted.

On page 16, line 13, "theirs" should be changed to "their".

4. Appropriate correction is required.

Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. (US 2002/0085858) in view of Kriegel (US 4,993,992).
7. Yamaguchi et al. (...858) disclose an image forming apparatus comprising: a photoconductor (1a, 1b, 1c or 1d) in which a first gear portion (19) is formed on the axis of rotation and on which an electrostatic latent image corresponding to a toner image is formed by a rotation in a circumferential direction (figures 3-6); a developing unit (5a, 5b, 5c or 5d) which is set correspondingly to the photoconductor, and makes visible the electrostatic latent image formed on the photoconductor thereby to form a toner image; and a photoconductor drive shaft having a second gear portion (18) engaging with the first gear portion and formed on an axis of rotation, which gears with the photoconductor on the same axis and rotation drives this photoconductor (figures 3-6). However, do not disclose a tooth of the gear portion different from axial lengths of other teeth. Kriegel (...992) disclose a tooth of a gear portion different from axial lengths of other teeth (abstract; col. 3, lines 55-60; col. 5, line 29 – col. 6, line 47; and figures 5 and 6). It would have been obvious to one of ordinary skill in the art at the time of the

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invention to have one tooth of a gear portion different from axial lengths of other teeth, as disclosed by Kriegel (...992) so as to ensure precise alignment and repeatable blind mounting of driver and driven halves.

8. Claims 2 and 4-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. (US 2002/0085858) in view of Tanizaki et al. (US 6,285,847) and Kriegel (US 4,993,992).

9. Yamaguchi et al. (...858) disclose an image forming apparatus comprising: a body of the image forming apparatus (figure 1); an image forming unit (Pa, Pb, Pc or Pd) which includes a photoconductor drum (1a, 1b, 1c or 1d), a charge member (3a, 3b, 3c or 3d) that charges the photoconductor drum, and a developing roller (5a, 5b, 5c or 5d) that makes an electrostatic latent image formed on the photoconductor drum visible by toner, and which is attached to the body (figure 2); and a photoconductor drive shaft (18) which is provided for the body, and transmits power to the photoconductor drum via splines, where first splines are formed axially on the photoconductor drum and second splines are formed axially on the photoconductor drive shaft (figures 3-6). Tapers are provided for a leading end portion of the first spline and a leading end portion of the second spline in order to smooth fitting between the photoconductor drum and the photoconductor drive shaft when the image forming unit is attached to the image forming apparatus body ([0115]-[0123]; and figures 4-6, 11, 12 and 16-18). The tapers are formed in the axial directions and in the rotational directions of the photoconductor drum and the photoconductor drive shaft (figures 4-6, 11, 12 and 16-18). The spline coupling is provided at an end portion of the photoconductor drum (figures 3-6). However, Yamaguchi et al. (...858) do

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not disclose the charge member in the form of a roller and the claimed facilitating means of a spline longer axially than other splines. Tanizaki et al. (...847) disclose an image forming apparatus including a charge member in the form of a charge roller (2a, 2b, 2c or 2d) (figure 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the charge member in the form of a charge roller, as disclosed by Tanizaki et al. (...847) since such form of a charger is well known in the art and is considered to be a functional equivalent of the charger of Yamaguchi et al. (...858) since both function to charge a photoconductor for image formation. Kriegel (...992) disclose a spline longer axially than other splines on the same axis, where the longer spline is a facilitating means for facilitating a connection between an driver and a driven member (abstract; col. 3, lines 55-60; col. 5, line 29 – col. 6, line 47; and figures 5 and 6). It would have been obvious to one of ordinary skill in the art at the time of the invention to have one spline longer axially than other splines, where such a longer spline is a facilitating means, as disclosed by Kriegel (...992), so as to ensure precise alignment and repeatable blind mounting of driver and driven halves.

Allowable Subject Matter

10. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior Art

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tenzor et al. (US 6,193,629) disclose a spline tooth longer than other spline teeth.

Katada et al. (US 6,671,475) disclose a drive transmission mechanism.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra L. Brase whose telephone number is (571) 272-2131. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur T. Grimley, can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Sandra L. Brase". The signature is fluid and cursive, with the first name "Sandra" and last name "Brase" clearly distinguishable.

Sandra L. Brase
Primary Examiner
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September 7, 2004